

AUG 25 '89 14:30

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with our experience. As noted in BAI's report, the actual cost will not be known until a contractor submits a bonded bid in response to a clear set of specifications. The Institute has provided a range for unit prices to attempt to compensate for that factor.

Upon reviewing past projects at the Southdale Office Centre and similar projects throughout 1989 year to date, the Institute has found removal prices to be far less than those presented in BAI's report. Described below as Project #1 and Project #2 are actual scenarios:

PROJECT #1 - Southdale Office Centre 6800 Building. This project involved the abatement of sprayed-on fire proofing and thermal system insulation on the seventh floor, east and south wings, and the east and south return air shafts which extended from the basement through the seventh floor inclusive. The scope of work included the removal of approximately 13,000 square feet of fire proofing applied to bar joists, columns, beams, and corrugated decking on the seventh floor; approximately 8,000 square feet of sprayed-on fire proofing attached to metal lath creating a fire barrier ceiling in Suites 725 and 795; approximately 10,000 square feet of fire proofing from the walls, ducts, and columns in the east and south shafts; and approximately 600 lineal feet of asbestos-containing thermal system insulation from the east and south shafts. This project was conducted in conjunction with the mechanical retrofit over a period of 30 days, 24-hours a day until project completion. The following costs were associated with the project:

Abatement of Sprayed-on  
Fire Proofing and  
Reinsulation/Removal of  
Thermal System Insulation and  
Reapplication

\$346,000

A/E and Monitoring

\$ 65,000

The following is a breakdown of these costs into unit prices:

\$346,000 divided by 31,400 SQ. FT. - \$11.00 per SQ. FT.

PROJECT #2 - Southdale Office Centre 6800 Building. This project involved the abatement of sprayed-on fire proofing on the seventh floor, west wing, Suites 750. The scope of work included the removal of approximately 10,700 square feet of fire proofing applied to the bar joists, columns, beams, wire metal lath, and corrugated decking. This project ran approximately 2 weeks, double shifts, 5 days a week, no weekends. The following costs were associated with the project:

Abatement, Sprayed-on Fire Proofing  
and Reinsulation 10,700 SQ. FT.

\$106,000

A/E and Monitoring

\$ 17,000

The following is a breakdown into unit prices:

\$106,000.00 divided by 10,700 - \$9.90 per SQ. FT.

As noted from previous projects conducted at the Southdale Office Centre, the square foot cost for removal and reinsulation was extremely low which is partially due to

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the competitive market in the Twin Cities. It is important to note that these projects were conducted during the Spring and Summer of 1988. Since then, the adoption of the Minnesota Department of Health Regulations have required that asbestos contractors and workers become licensed within the state, pay a 1% permit fee and are held to higher public health standards. This has had an effect on the costs of abatement, which is indicative of the unit prices. We have found, through the Summer of 1989, that the prices for removal of fire proofing range from \$15.00 to \$22.00 a square foot. In addition, we have just completed a 3.7 million dollar emergency project for a school complex which began on May 4, 1989, and was completed on July 20, 1989, involving the removal of asbestos-containing fire proofing on all structural members and overspray throughout. The amount of asbestos-containing fire proofing totalled approximately 300,000 square feet and included the removal of the entire suspended ceiling system and light fixtures. The actual unit cost for fire proofing removal in this case amounted to \$12.00 per square foot. This cost did not include reinsulation. The bid ranges were \$12.00 - \$19.00 per square foot.

The abatement cost estimates that the Institute provided did not include consulting services. BAI estimates include costs to prepare the technical specification and bid documents, along with assisting your organization in the selection of a qualified abatement contractor. They further stated that the estimates also include costs to monitor the abatement contractor's performance; to collect, analyze, and interpret environmental air samples during the project; and to prepare a report which will document the quality of the project.

BAI also stated that the cost estimates to provide ACM consultation and to monitor the ACM abatement are based upon the assumption that the contractor would work one shift, 8 hours per day, 5 days per week, per their estimated schedule.

The consulting services cost from BAI do reflect the Twin Cities market. Those costs are similar to what the Institute or any other consulting firm in the Twin Cities would charge to provide A/E monitoring services.

In conclusion, it is the Institute's belief that the cost for the asbestos removal and reinsulation in the 6800 Building as indicated in the May 20, 1988 Inspection Profile for the Southdale Office Centre, of approximately \$5,000,000 is still accurate for the Twin Cities market. I would agree with BAI that the costs for removal and reinsulation in both the 6700 and 6750 Building should increase and are approximately \$38,000 each. The following is an update to our cost estimates of May 20, 1988.

<u>ASBESTOS-CONTAINING MATERIAL</u>	<u>COST ESTIMATE</u>	<u>ACTUAL COST</u>
<u>6800 Building</u>		
Sprayed-on Fire Proofing Removal and Reinsulation (remaining 7th Floor)	\$ 120,000	
(previously removed 7th Floor)		\$452,000

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1st - 6th Floors

Sprayed-on Fire Proofing Removal  
and Reinsulation  
Approximately \$600,000 per floor \$3,600,000

Basement

Sprayed-on Fire Proofing Removal  
and Reinsulation  
(this includes the boiler room) \$ 650,000

6750 Building

ACM Removal and Reinsulation  
and/or Replacement \$ 38,000

6700 Building

ACM Removal and Reinsulation  
and/or Replacement \$ 38,000

SUB TOTALS:

A/E and Monitoring ACM \$ 343,000+  
ACM Removal (remainder) \$4,446,000  
Contingency 10% \$ 478,000

TOTAL \$5,267,000

\$452,000

*Spring + Summer  
1988.*

\* Extracted from BAI Report.

All of the aforementioned prices were calculated utilizing the high range of the scale.

Finally, it is important to note that the Southdale Office Centre now has an operations and maintenance program, and the maintenance and custodial staff have attended a one-day course on asbestos hazards.

I hope this information is helpful. If you have any comments or questions regarding this information, please don't hesitate to contact me at 612/427-7870.

Sincerely,



Joe Schwartzbauer  
Manager, Project Development

JS:dr/mw3

cc: Howard Siegel

PI8 00163679

APPENDIX I

## **APPENDIX I**

**GENERAL LEDGER JANUARY 1, 1990**  
**THROUGH DECEMBER 31, 1995**

Run Date: 02/25/91  
Time: 10:34:30

Client No. 310  
YTD General Ledger  
Southdale Office Centre  
As of December 31, 1990

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Gen	Sub	Description	J Ref	Debit	Credit	Balance
1610	0000	Building				8,726,581.07
*****						
01/31/90	Albinson		AP 00293		2,926.31	
	January Total			0.00	2,926.31	
						8,723,654.76
02/01/90	Trans-Alarm, Inc.		AP 00586	44,009.48		
	February Total			44,009.48	0.00	
						8,767,664.24
03/01/90	Rcl Trans Al to/1810		GJ 03047		44,009.48	
	March Total			0.00	44,009.48	
						8,723,654.76
06/30/90	Reclass REI fr/1710		GJ 06005	4,257.00		
	June Total			4,257.00	0.00	
						8,727,911.76
***YTD Total				48,266.48	46,935.79	
						8,727,911.76
1630	0000	Building Imrove.-Asbestos				0.00
*****						
03/30/90	Thompson Plastering		AP 00736	15,500.00		
03/31/90	Allegro Technology C		AP 00735	56,155.00		
03/31/90	Rcl Thompson to/1430		GJ 04090		15,500.00	
03/31/90	Rcl Allegro to/1430		GJ 04090		56,155.00	
	March Total			71,655.00	71,655.00	
						0.00
09/30/90	6800 5th flr fr/1430		GJ 09010	191,643.22		
	September Total			191,643.22	0.00	
						191,643.22

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YTD General Ledger

Southdale Office Centre

As of December 31, 1990

Gen	Sub	Description	J Ref	Debit	Credit	Balance
12/31/90	RVS 6J 09010	to/1435 6J 12097			191,643.22	
		December Total		59,759.78	191,643.22	
						59,759.78
		***YTD Total		323,058.00	263,298.22	
						59,759.78

1635 0000	Building Improvements				0.00
05/31/90		Carpet donation	6J 05045		875.00
		May Total		0.00	875.00
					(875.00)
12/31/90	'90 Bldg.Imp.fr/1435	6J 12098		17,647.13	
		December Total		17,647.13	0.00
					16,772.13
		***YTD Total		17,647.13	875.00
					16,772.13

40 0000	Tenant Improvements				15,961.00
01/01/90	Cirks Construction,	AP 00249		5,430.43	
01/29/90	Cirks Construction,	AP 00489		9,725.67	
01/29/90	Cirks Construction,	AP 00490		12,156.74	
01/29/90	Cirks Construction,	AP 00491		8,406.02	
01/31/90	Waverly Lock Co	AP 00305		33.00	
	January Total			35,751.86	0.00
					51,712.86

02/28/90	Cirks Construction,	AP 00574		1,036.20	
02/28/90	Cirks Construction,	AP 00575		2,730.09	

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Company No. 310  
YTD General Ledger  
SOUTHDALE OFFICE CENTRE  
ASSETS - AS OF 12/31/91

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Gen	Sub	Description	J Ref	Debit	Credit	Balance
		December Total		0.00	55,056.69	
						821,000.00

\*\*\*YTD Total

119,144.25 65,677.96

821,000.00

1610 0000 Building

8,727,911.76

\*\*\*YTD Total

0.00 0.00

8,727,911.76

1630 0000 Building Improve.-Asbestos

59,759.78

03/01/91	Corr basmnt GJ	03108	GJ	03110		5,000.00
03/01/91	Cirks ck1033 fr	1435	GJ	03110	6,078.76 ✓	
03/01/91	Tfr 5th fl E fr/1430	GJ	03108		194,255.06	
03/01/91	Tfr 6th fl fr/1430	GJ	03108		455,414.64	
03/01/91	Tfr basmnt fr/1430	GJ	03108		621,993.66	
03/01/91	Adj 12/90 entry elev	GJ	03108			8,143.16
03/01/91	Tfr 5th fl W fr/1430	GJ	03108		131,458.33	
03/01/91	Egan & Sons Air Cond	AP	32961		3,160.00	
03/01/91	Spectrum Electric, I	AP	33213		283.00	
03/01/91	Gebert Floor Coverin	AP	33214		97.65	
03/01/91	Thompson Plastering	AP	33261		4,636.00	
03/01/91	Nova Environmental	AP	33335		4,406.72 ✓	
03/03/91	Cirks Construction,	AP	33001		26,225.90	
03/03/91	Cirks Construction,	AP	33142		9,750.53	
03/03/91	Cirks Construction,	AP	33211		10,011.45	
03/08/91	Thompson Plastering	AP	33264		400.00	
03/08/91	Thompson Plastering	AP	33348		18,003.00	
03/11/91	Nova Environmental	AP	33336		2,250.24 ✓	
03/15/91	Gebert Floor Coverin	AP	33328		166.00	
03/17/91	PLUMM, Inc.	AP	33171		375.00	
03/18/91	Egan & Sons Air Cond	AP	33309		975.00	
03/18/91	Egan & Sons Air Cond	AP	33311		3,090.00	
03/26/91	Harmon Glass & Glazi	AP	33322		316.67	



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Gen	Sub	Description	J Ref	Debit	Credit	Balance
03/29/91		Shield Fire Protecti	AP 33326	256.48		
03/31/91		Tfr 6750 bldg f/1430	GJ 03108	54,679.30		
March Total				1,548,823.39	13,143.16	

1,595,500.

04/01/91		Egan & Sons Air Cond	AP 33458	6,360.00		
04/03/91		Cirks Construction,	AP 33420	16,065.61		
04/05/91		Electric Repair &	AP 33491	2,458.46		
04/05/91		Electric Repair &	AP 33492	4,524.81		
04/05/91		Electric Repair &	AP 33493	1,028.45		
04/05/91		Electric Repair &	AP 33494	3,219.41		
04/05/91		Electric Repair &	AP 33504	2,346.69		
04/08/91		Thompson Plastering	AP 33388	22,458.00		
April Total				58,461.43	0.00	

1,653,961.

05/01/91		Cirks Construction,	AP 33556	9,466.60		
05/01/91		Electric Repair &	AP 33581	6,584.71		
05/01/91		Egan & Sons Air Cond	AP 33582	5,025.00		
05/05/91		Cirks Construction,	AP 33560	1,790.80		
05/05/91		Cirks Construction,	AP 33562	458.70		
05/05/91		Cirks Construction,	AP 33636	2,512.40		
05/05/91		Cirks Construction,	AP 33639	9,251.00		
05/10/91		Electric Repair &	AP 33589	2,169.42		
May Total				37,258.63	0.00	

1,691,220.0

06/01/91		Gnl.Con.33578 fr1430	GJ 06104	2,150.00 ✓		
06/01/91		Egan Son33583 fr1430	GJ 06104	4,490.00 ✓		
06/01/91		Elec Rep33589 1430	GJ 06109		2,169.42 ✓	
06/01/91		GJ03110 Cirks sb1430	GJ 06103		6,078.76 ✓	
06/01/91		Nova AP33335 sb 1430	GJ 06103		4,406.72 ✓	
06/01/91		Nova AP33336 sb 1430	GJ 06103		2,250.24 ✓	
06/01/91		Cirks AP33288 u 1630	GJ 06103	654.50		
06/01/91		GJ03108 bsmt. corr.	GJ 06103		1,527.96	
06/01/91		Electric Repair &	AP 33757	1,297.25		
06/07/91		Cirks Construction,	AP 33773	1,861.20		
June Total				10,452.95	16,433.10	

1,685,239.9

07/01/91		M.J. Construction Cl	AP 33994	731.00		
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ASSETS - AS OF 12/31/91

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Gen	Sub	Description	J Ref	Debit	Credit	Balance
07/01/91		Rem-Con, Inc.	AP 33995	6,111.00		
07/01/91		Genuine Construction	AP 33998	5,019.00		
07/01/91		Egan & Sons Air Cond	AP 34002	1,635.00		
07/01/91		Electric Repair &	AP 34045	446.65		
07/01/91		Gnl Con33578 to/1430	GJ 07105		2,150.00 ✓	
07/01/91		Egan&S.33583 to/1430	GJ 07105		4,490.00 ✓	
07/01/91		Allegro32759 fr/1430	GJ 07105	775.00		
07/22/91		Electric Repair &	AP 34205	771.32		
07/25/91		Rem-Con, Inc.	AP 34190	5,549.50		
07/28/91		Cirks Construction,	AP 34082	2,678.50		

July Total

23,716.97

6,640.00

1,702,316.89

08/01/91		American Building	AP 34252	531.21		
08/01/91		American Building	AP 34262	516.84		
08/01/91		American Building	AP 34264	460.63		
08/01/91		Barrett Moving & Sto	AP 34269	2,342.00		
08/01/91		Qual.Ins34198 f/1430	GJ 08106	2,312.00		
08/30/91		Electric Repair &	AP 34392	337.43		

August Total

6,500.11

0.00

1,708,817.00

09/01/91		Electric Repair &	AP 34554	2,433.46		
09/01/91		American Building	AP 34479	394.40		
09/01/91		American Building	AP 34480	465.28		
09/23/91		Cirks Construction,	AP 34522	693.00 ✓		
09/23/91		Cirks Construction,	AP 34531	1,435.50 ✓		

September Total

6,422.24

0.00

1,714,239.24

10/01/91		Am Bldg34479 to/1430	GJ 10004		693.00 ✓	
10/01/91		Am Bldg34480 to/1430	GJ 10004		1,435.50 ✓	
10/11/91		Electric Repair &	AP 34701	157.00		
10/16/91		Spectrum Electric, I	AP 34703	300.00		
10/17/91		Cirks Construction,	AP 34727	202.40		
10/31/91		Cirks 34522 to/1443	GJ 10005		693.00	

October Total

659.40

2,821.50

1,712,077.14

10/07/91		Harmon Glass & Glazi	AP 34879	395.00		
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YTD General Ledger

SOUTHDALE OFFICE CENTRE

ASSETS - AS OF 12/31/91

Gen	Sub	Description	J Ref	Debit	Credit	Balance
11/16/91		Genuine Construction	AP 34890	1,820.00		
11/17/91		Cirks Construction,	AP 34881	3,174.60		
November Total				5,389.60	0.00	
						1,717,466.74
12/31/91		Asbestos Imp.fr/1430	GJ 13001	889,624.94		
December Total				889,624.94	0.00	
						2,607,091.68
***YTD Total				2,586,369.66	39,037.76	
						2,607,091.68
1635 0000		Building Improvements				16,772.13
*****						
03/01/91		Proj. 3.04 fr 1435	GJ 03110	37,055.53		
March Total				37,055.53	0.00	
						53,827.66
06/01/91		Petersen Electric	AP 33788	6,037.00		
06/01/91		Petersen Electric	AP 33787	2,745.49		
06/18/91		Ben Franklin Electric	AP 33955	21,149.00		
June Total				29,931.49	0.00	
						83,759.15
07/01/91		X N R Electronics, I	AP 34094	957.00		
07/01/91		Shield Fire Protecti	AP 34095	3,566.00		
07/10/91		Simplex Time Recorde	AP 34165	1,555.37		
07/31/91		Simplex34165 to/1430	GJ 07123		1,155.37	
July Total				6,078.37	1,155.37	
						88,682.15
08/01/91		Thomas Sign Company	AP 34281	2,375.00		

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Time: 15:57:02

Company No. 310  
YTD General Ledger  
SOUTHDALE OFFICE CENTRE  
FINAL - As of 12/31/93

Page

Gen	Sub	Description	J Ref	Debit	Credit	Balance
1510	0000	Building Land				6,762,868.31

\*\*\*YTD Total

0.00

0.00

6,762,868.37

1520	0000	Land Improvements				825,985.19
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03/31/93	6311225	fr/1635	63 03325	9,951.25		
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March Total

9,951.25

0.00

235,936.44

09/04/93		Superior Striping In AP 07341		511.00		
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09/15/93		Thomas Sign Company AP 07363		1,034.85		
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September Total

1,545.85

0.00

837,582.29

\*\*\*YTD Total

11,597.10

0.00

837,582.29

1610	0000	Building				8,727,911.76
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\*\*\*YTD Total

0.00

0.00

8,727,911.76

1630	0000	Building Improve.-Asbestos				2,760,861.62
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01/12/93		HDR	AP 06211	518.00		
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01/19/93		Nova Environmental	AP 06350	1,500.00		
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January Total

2,018.00

0.00

2,762,879.62

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SOUTHDALE OFFICE CENTRE  
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Gen	Sub	Description	J Ref	Debit	Credit	Balance
02/09/93	HOR		AP 06280	492.00		
February Total				492.00	0.00	
						2,763,371.62
04/30/93	Tfr 1.01 fr 1430	GJ 04398		155,522.94		
04/30/93	Tfr 1.02 fr 1430	GJ 04398		372,447.76		
04/30/93	Tfr 1.03 fr 1430	GJ 04398		506,712.59		
04/30/93	Tfr 1.06 fr 1430	GJ 04398		170,212.37		
04/30/93	Tfr 1.07 fr 1430	GJ 04398		125,138.64		
April Total				1,330,034.30	0.00	
						4,093,405.92
06/30/93	Cirks:12/92 fr 1430	GJ 06316		1,500.00		
06/30/93	Tfr Asb WIP fr 1430	GJ 06316		13,764.71		
06/30/93	Tfr 12/92 WIP f/1430	GJ 06316		4,940.76		
June Total				20,205.47	0.00	
						4,113,611.31
12/31/93	Tran 2WIP fr 1430	GJ 12323		351,074.51		
December Total				351,074.51	0.00	
						4,464,685.94
***YTD Total				1,703,824.28	0.00	
						4,464,685.92

635 0000 Building Improvements 381,833.04  
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3/31/93	GJ11225 to/1520	GJ 03325		9,951.25		
March Total				0.00	9,951.25	
						371,881.79

04/30/93	Tr 2.03 fr 1435	GJ 04397		638,358.14		
04/30/93	Tr 2.04 fr 1435	GJ 04397		113,747.47		
04/30/93	Tr 2.05 fr 1435	GJ 04397		8,423.00		
04/30/93	Tfr AP 06574 fr 1435	GJ 04397		1,300.97		
04/30/93	Tfr 3.01 fr 1435	GJ 04397		338,985.79		

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Company No. 310  
YTD General Ledger  
SOUTHDALE OFFICE CENTRE

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Balance Sheet Accounts - As of 12/31/92

Gen	Sub	Description	J Ref	Debit	Credit	Balance
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***YTD Total				16,362.32	11,377.13	
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825,985.19

1610	0000	Building				8,727,911.76
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***YTD Total				0.00	0.00	
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8,727,911.76

1630	0000	Building Improve.-Asbestos				2,607,091.68
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01/07/92	Genuine Construction	AP 35102		710.00		
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01/22/92	Cirks Construction,	AP 35276		1,782.00		
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January Total				2,492.00	0.00	
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2,609,583.68

03/31/92	Gen.Con.35102 to1430	GJ 03227			710.00	
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03/31/92	Cirks 35276 to/1630	GJ 03227			1,782.00	
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March Total				0.00	2,492.00	
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2,607,091.68

11/19/92	Nova Environmental	AP 05909		3,909.16		
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November Total				3,909.16	0.00	
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2,611,000.84

12/31/92	1.05 balance fr/1430	GJ 12231		12,864.21		
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12/31/92	1.04 WIP fr/1430	GJ 12231		136,996.57		
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December Total				149,860.78	0.00	
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2,760,861.62

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09:59:25

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YTD General Ledger  
SOUTHDALE OFFICE CENTRE

Balance Sheet Accounts - As of 12/31/92

Sub	Description	J Ref	Debit	Credit	Balance
***YTD Total			156,261.94	2,492.00	
					2,760,861.62
0000	Building Improvements				115,588.68
*****					
/92	Ettel & Franz Compan AP	05653	43,690.00		
October Total			43,690.00	0.00	
					159,278.68
/92	Petrotank reim-state CR	11203		11,377.13	
/92	NOVA #31577 fr/1225 GJ	11225	1,804.80		
/92	NOVA #31576 fr/1225 GJ	11225	1,506.20		
/92	Tank Abate fr/1225 GJ	11225	2,376.23		
/92	Tank Abate fr/1225 GJ	11225	4,264.02		
November Total			9,951.25	11,377.13	
					157,852.80
/92	3.06 WIP fr/1435 GJ	12231	6,684.00		
/92	2.02 WIP fr/1435 GJ	12231	205,919.11		
/92	Tank refund to/1520 GJ	12231	11,377.13		
December Total			223,980.24	0.00	
					381,833.04
***YTD Total			277,621.49	11,377.13	
					381,833.04

0000 Tenant Improvements 3,497,110.31

\*\*\*\*\*

/92	Clin.Ph.inc TI reim	RC	09104	88.20	
/92	Cirks Construction.	AP	35169	253.04	
/92	Cirks Construction.	AP	35099	8,657.29	
/92	Fabyanske, Svoboda e	AP	35219	4,783.43	
/92	Tech Builders Inc.	AP	35104	203,030.45	
/92	Fabyanske, Svoboda e	AP	35277	1,977.03	
/92	Cirks Construction.	AP	35217	1,111.00	
/92	Cirks Construction.	AP	35218	1,159.18	

Run Date: 05/31/96

Company No. 310

Page 1

Time: 16:05:45

YTD General Ledger  
 SOUTHDALÉ OFFICE CENTRE  
 01/01/94 - 12/31/94

Gen	Sub	Description	J Ref	Debit	Credit	Balance
1630	0000	Building Improve.-Asbestos				4,464,685.90
*****						
03/31/94		Tfr WIP-Asbests 3/94 GJ 03445		400.00		
03/31/94		Tfr WIP-Asbests 3/94 GJ 03446		950.00		
March Total				1,350.00	0.00	
						4,466,035.90
06/30/94		Rcl fr 1430-Asbestos GJ 06412		2,198.00		
06/30/94		Rcl fr 1430-Asbestos GJ 06413		800.00		
June Total				2,998.00	0.00	
						4,469,033.90
08/01/94		Rcl fr 1635 GJ 08401		8,021.20		
08/01/94		Cirks Construction, AP 08836		3,738.90		
08/09/94		Cirks Construction, AP 08929		2,498.00		
08/31/94		Rcl fr 1635 -AP 7811 GJ 08402		6,462.50		
08/31/94		Rcl fr 1635 -AP 7840 GJ 08402		1,097.80		
August Total				21,818.40	0.00	
						4,490,852.30
***YTD Total				26,166.40	0.00	
						4,490,852.30



Run Date: 05/31/96

Time: 16:05:30

Company No. 310  
 YTD General Ledger  
 SOUTHDALÉ OFFICE CENTRE  
 01/01/95 - 12/31/95

Page 1

Gen	Sub	Description	J Ref	Debit	Credit	Balance
1630	0000	Building Improve.-Asbestos				4,490,852.30
*****						
05/31/95		Trnsf fr 1430 - WIP	GJ 05577	46,685.10		
		May Total		46,685.10	0.00	
						4,537,537.40
06/30/95		Trnf fr 1430-WIP Asb	GJ 06516	20,927.02		
		June Total		20,927.02	0.00	
						4,558,464.42
07/01/95		Plantscape, Inc.	AP 10507	255.60		
		July Total		255.60	0.00	
						4,558,720.02
10/31/95		Sale of SOC	GJ 10545		4,558,720.02	
		October Total		0.00	4,558,720.02	
						0.00
***YTD Total				67,867.72	4,558,720.02	
						0.00

**Halliwell Backup to Southdale Office Complex**

<b><u>Date</u></b>	<b><u>Description</u></b>
<b><u>Southdale Purchase Agreement</u></b>	
11/3/88	Prudential letter to The Lexington Property Fund re: Southdale Office Building – Purchase Agreement
11/3/89	Purchase Agreement between 745 Property Investments to The Lexington Property Fund
6/30/89	Letter from James Felt Realty Services to Prudential re: PRISA 609 Southdale Office Center, Edina, Minnesota – market value as of 6/30/89 is \$20,650,000
7/3/89	Letter from Boelter Environmental Consultants to The Lexington Company re: Preliminary Cost Estimates – Southdale Office Center
<b><u>Sales Discount Info \$/Square Feet</u></b>	
11/3/89	Excerpt of Purchase Agreement between 745 Property Investments and The Lexington Property Fund
5/88	Inspection profile for the Southdale Office Complex, Edina, Minnesota prepared by The Institute for Environmental Assessment
8/23/89	Letter from The Institute for Environmental Assessment to Prudential Realty – comments to review of environmental audit
11/3/89	Prudential letter to The Lexington Property Fund re: Southdale Office Building – Purchase Agreement
7/3/89	Letter from Boelter Environmental Consultants to The Lexington Company re: preliminary cost estimates of \$6 million – Southdale Office Center
6/30/89	Letter from James Felt Realty Services to Prudential re: PRISA 609, Southdale Office Center, Edina, Minnesota – market value as of 6/30/89 is \$20,750,000

Handwritten notes re: Southdale Purchase Agreement 11/3/88

<u>Date</u>	<u>Description</u>
	<b><u>Asbestos Management Plan</u></b>
6/29/90	Standard procedures for operation and maintenance activities involving asbestos in the Southdale Office Center – Master Manual Draft No. 2 by Nova Environmental Services
	Document entitled Asbestos and Public Health Concerns for the Prudential Property Company Southdale Office Center
6/6/90	Asbestos Building Survey, 6600 Southdale Office Center, Edina, Minnesota prepared for Richard Ellis, Inc. prepared by Nova Environmental Services
	<b><u>Survey Southdale</u></b>
7/14/86	Asbestos Survey Report for Prudential Insurance Company Property 745-609, Southdale Office Center prepared by BCM Converse, Inc.
12/9/87	Report of Asbestos Survey prepared by Twin City Testing to The Lexington Company
8/23/89	Letter from The Institute for Environmental Assessment to Prudential Realty re: comments on the environmental audit of the Southdale Office Center
	<b><u>Cost File – 7<sup>th</sup> Floor Ph. 2 Suite 735</u></b>
6/30/88	Standard form of Agreement between Prudential Property Company and EnviroNet, Inc. for the Southdale Office Complex Suite 735
11/30/88	Institute for Environmental Assessment Invoice No. 12304 in the amount of \$23,584.52
7/16/90	Invoice No. 43640 of Egan & Sons Air Conditioning in the amount of \$190
	Invoice from EnviroNet for asbestos abatement in the amount of \$96,035
6/27/88	Letter from United Properties to Prudential re: Southdale Office Center 735 – asbestos removal charges to date

<u>Date</u>	<u>Description</u>
6/29/88	Letter from The Institute for Environmental Assessment to United Properties – estimate for environmental management project costs in the amount of \$18,864 in the 6800 Building of the Southdale Office Center, Suite 735
<b><u>Project File – 7<sup>th</sup> Floor Ph. 1 Pre-Sale</u></b>	
4/21/88	Letter from The Institute for Environmental Assessment to United Properties re: revisions to 4/13/88 proposal for Southdale Office Complex
4/13/88	Letter from The Institute for Environmental Assessment to United Properties re: inspection of Suites 795 and 727 at the Southdale Office Complex
4/26/88	Letter sent to all Southdale tenants regarding the asbestos management and abatement program being implemented
8/88	Final Report for Prudential Properties, 6800 Southdale Office Complex abatement of sprayed-on fire retardant on the 7 <sup>th</sup> floor East and South wings and the East and South return air shafts prepared by The Institute for Environment Assessment
<b><u>Cost File – 7<sup>th</sup> Floor Ph. 1 Pre-Sale</u></b>	
5/13/88	EnviroNet Invoice No. 3366 in the amount of \$170,000
5/31/88	EnviroNet Invoice No. 3378 in the amount of \$131,089.58
5/18/88	Change Order 1
5/18/88	Change Order 2
5/18/88	Change Order 3
7/8/88	Change Order 4
7/14/88	EnviroNet Invoice No. 5711 in the amount of \$992
7/8/88	Change Order 5
7/14/88	EnviroNet Invoice No. 5710 in the amount of \$3,731
5/19/88	Change Order 6

<u>Date</u>	<u>Description</u>
5/25/88	Institute for Environmental Assessment Invoice No. 11023 in the amount of \$10,000
8/31/88	Institute for Environmental Assessment Invoice No. 11400 in the amount of \$67,155.02
6/3/88	SECO Invoice No. 0020802 in the amount of \$1,697.65
6/27/88	United Properties letter to Prudential re: Southdale Office Center 735 removal – total Phase 1 charges of \$437,006 spent on asbestos removal

**Drawings, Sketches**

5/1/96	Fax from Bob at Richard Ellis, Inc. to Todd attaching various drawings of complex
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**Project File – Suite 735 Ph. 2 7<sup>th</sup> Floor Pre-Sale**

Undated	Final Report, 6800 Southdale Office Complex, Abatement of Sprayed-On Fire Retardant on the 7 <sup>th</sup> Floor West Wing Suites 735 through 750 prepared by The Institute for Environmental Assessment
Undated	Specification for asbestos abatement for area renovation Southdale Office Center, Edina, Minnesota

**Specs**

3/4/91	Specifications for asbestos abatement at 6800 France Avenue South, Edina, Minnesota prepared by Nova Environmental Services
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**Post-Sale General Ledger**

2/25/91	Year-to-date general ledger for Southdale Office Center as of December 31, 1990
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**Opinion File Southdale**

4/12/88	Prudential letter re: Southdale Office Center attaching letter from The Institute for Environmental Assessment regarding asbestos
4/21/88	Institute for Environmental Assessment letter to United Properties re: revisions to 4/13/88 proposal on the abatement of asbestos-containing materials at the Southdale Office Complex

<u>Date</u>	<u>Description</u>
8/6/90	Letter from Richard Ellis, Inc. to Abrams & Spector re: response to letter to Ms. Laurie Randall dated 8/2/90
8/20/90	Letter from Richard Ellis, Inc. to Cummings, Keegan & Co. re: proposal for move to 6 <sup>th</sup> floor

#### Costs Summary Status of Abatement

Undated	Building summary for Southdale Office Complex
11/1/90	Letter from Richard Ellis, Inc. to Bank of Montreal re: Southdale Office Center Activity Update
8/6/90	Letter from Richard Ellis, Inc. to Abrams & Spector re: response to letter to Ms. Laurie Randall dated 8/2/90
8/20/90	Letter from Richard Ellis, Inc. to Cummings, Keegan & Co. re: proposal for move to 6 <sup>th</sup> floor
Undated	Prudential Insurance Summary of Available Information

#### Future Cost

7/30/90	Letter from Nova Environmental Services to Richard Ellis, Inc. enclosing Addendum to Conclusion to be incorporated into the Final Air Monitoring Report for the 5 <sup>th</sup> floor East Abatement Project Report dated 4/19/90
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#### Dust Control Cost Pre-Sale/Non FP

5/25/88	Marsten Invoice to United Properties in the amount of \$1,650.42
5/17/88	Heerquist Elevators Invoice No. 47358 to United Properties in the amount of \$671.90
12/3/89	Final Report Abatement of 24 Expansion Joints October 21-23, 1988 6750 Southdale Office Complex penthouse, United Properties, Edina, Minnesota prepared by The Institute for Environmental Assessment

#### Project File O&M

6/29/90	Standard Procedures for Operations and Maintenance Activities Involving Asbestos in the Southdale Office Center Master Manual Draft No. 2 prepared by Nova Environmental Services
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<u>Date</u>	<u>Description</u>
3/89	Operations and Maintenance Plan for Southdale Office Center 6600, 6700, 6750 and 6800 France Avenue, Edina, Minnesota prepared by The Institute for Environmental Assessment
10/30/87	Excerpts from the Federal Register
	<b><u>Southdale Inspection 1</u></b>
	Photographs and Jack Halliwell Photo Log
	<b><u>Southdale Inspection 2</u></b>
	Photographs and Jack Halliwell Photo Log

3251710.01

## EXHIBIT D



Southdale Office Complex  
6800 Bldg  
Edina, MN  
(W.R. Grace)

**TABLE 2**  
**Summary of Asbestos Fireproofing Removal and Replacement**  
**Net Costs Prior to Building Sale**

PROJECT INFORMATION	7th-Phases 1 & 2 05/88-11/88 Environet I.E.A.
Asbestos Abatement Dates	
Asbestos Abatement Contractor	
Asbestos Abatement Consultant	
Project Floor Area (square feet)	19,918
<b>GROSS ABATEMENT PROJECT COSTS (1)</b>	
Asbestos Abatement Contractor	\$453,041.38
Asbestos Abatement Consultant	100,739.54
Electrician	1,697.65
Total Gross Abatement Project Costs	\$555,478.57
Total Cost per square foot of floor area	\$27.89
<b>DEDUCTIONS FOR NON FIREPROOFING</b>	
<b>PROJECT COSTS (NON FP)</b>	
Vinyl Asbestos Floor Tile (VAT) Removal (2)	\$0.00
Thermal System Insulation (TSI) Removal (3)	12,586.00
Miscellaneous Project Cost Deductions (4)	0.00
Total Project Deductions	\$12,586.00
<b>CONTAMINATED BUILDING</b>	
<b>COMPONENT REPLACEMENT COSTS (5)</b>	
Ceilings	\$0.00
Light Fixtures	0.00
Ductwork	0.00
Total Contaminated Bldg. Component Replacement Cost	\$0.00
<b>TOTAL NET PROJECT COSTS</b>	
Total Net Project Costs	\$542,892.57
Total Net Project Costs Per Square Foot of Floor Area	\$27.26

**Notes:**

- (1) Refer to Table 3 for detailed listing of Gross Abatement Project Costs.
- (2) No VAT removal required by project documents, therefore deduct = \$0.
- (3) Refer to Appendix D for Summary of TSI Project Costs Deductions.
- (4) There were no Miscellaneous Project Cost Deductions, therefore deduct = \$0.
- (5) Refer to Table 7 for costs not included in this report.

Southdale Office Complex  
6800 Bldg  
Edina, MN  
(W.R. Grace)

**TABLE 3**  
**Detailed Costs for Completed Asbestos Fireproofing Removal and Replacement Projects Prior to Building Sale**

Floor No.	Vendor	Invoice No.	Invoice Date	Total Invoice	Non FP	Description
7th	Environet	3366	5/13/88	\$170,000.00		50% progress payment for asbestos abatement. (Contract Amount = \$340,000)
7th	Environet	3378	5/31/88	131,089.38		Removal & disposal of asbestos containing materials (includes C.O.#1 = \$1,668.38 for cleaning debris in penthouse & roof area).
7th	Environet			40,000.00		Retainage.
7th	Environet	C.O. #2	5/2/88	0.00		C.O.#2 = \$0.00 for an additional 6 days to remove overspray from ducts & piping within shafts unknown to the owner.
7th	Environet	C.O. #3	5/2/88	0.00		C.O.#3 = \$0.00 for an additional 16 hours because of the wind conditions and building air not on.
7th	Environet	C.O. #4	5/19/88	992.00		C.O.#4 = \$992.00 for ACM bulk removal from the roof & \$565.00 for glovebag removal of fireproofing over south door.
7th	Environet	C.O. #5	5/19/88	3,731.00		C.O.#5 = \$3,731.00 for southside enclosure & decon chamber to lower ducts & build air return for air conditioning.
7th	Environet	C.O. #6	5/19/88	1,194.00		C.O.#6 = \$1,194.00 for covering of A/C copper pipe with plywood & \$114.00 for repairs to plywood covering after trouble with A/C refrigerant lines underneath plywood enclosure.
7th	Environet	5737	8/1/88	96,035.00		Removal and disposal of asbestos containing materials. (Contract Amount = \$106,035).
7th	Environet			10,000.00		Retainage.
		<b>Contractor Subtotal =</b>		<b>\$453,041.38</b>		<b>Total Contract Value = \$340,000.00 + \$106,035.00 + \$7,585.38 (CO's) = \$453,620.38</b>
7th	I.E.A.	11023	5/25/88	\$10,000.00		Inspection, assessment, sampling and analysis
7th	I.E.A.	11400	8/31/88	67,155.02		On-site monitoring, project development, consultation, lab analysis for April, May & June 1988.
7th	I.E.A.	12304	11/30/88	23,584.52		Abatement air monitoring
		<b>Consultant Subtotal =</b>		<b>\$100,739.54</b>		
7th	Seco	0020802	6/3/88	\$1,697.65		Remove electrical devices for asbestos removal.
		<b>Electrician Subtotal =</b>		<b>\$1,697.65</b>		
		<b>Gross Abatement Project Costs =</b>		<b>\$555,478.57</b>		

Southdale Office Complex  
6800 Bldg  
Edina, MN  
(W.R. Grace)

TABLE 4  
Detailed Costs for Completed Asbestos Fireproofing In-Place Management Projects Prior to Building Sale

Floor No.	Vendor	Invoice No.	Invoice Date	Total Invoice	Non FP	Description
4th	Environet	5712	7/12/88	\$1,163.68		Removal & disposal of asbestos containing materials from rooms 445 and 448.
4th	Environet	5713	7/13/88	1,070.63		Removal & disposal of asbestos containing materials from the NW corner.
4th	Environet	5746	8/8/88	13,592.66		Removal & disposal of asbestos containing materials from the NW corner.
		Dust Control Subtotal =		\$15,826.97		
	Twin City Testing	4410-88-1151	12/30/87	\$871.84 *		*Asbestos testing: Total invoice \$7,026.00 for 137 bulk samples. Pro-rated cost for the 6800 building fireproofing samples = $(17 / 137) \times \$7,026.00 = \$871.84$ (rounded).
		Building Survey Total =		\$871.84		
	Environet	3356	4/29/88	\$2,688.00		Cleanup from roof leak.
		Cleanup Subtotal =		\$2,688.00		
	I.E.A	11304	8/16/88	\$10,000.00		Risk assessment completion.
	I.E.A	13117	4/21/89	2,500.00		Professional services - Operations and Maintenance Plan.
	I.E.A	13342	6/16/89	1,875.00		1 day O & M training.
		Subtotal		\$14,375.00		
	BCM Engineers	4-3162	4/7/89	\$250.00		Asbestos awareness video.
		O&M Total =		\$14,625.00		
		Total In-Place Management Projects Costs =		\$34,011.81		

## EXHIBIT E

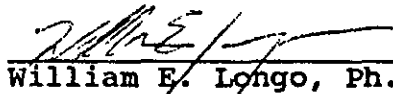


June 25, 1990

Re: Southdale Office Center  
Edina, Minnesota

Based on the constituent analysis of the fireproofing samples for the above-referenced project, it is my opinion that the samples analyzed are Mono-Kote 3, which was manufactured by W. R. Grace.

Worksheets reflecting our analysis are attached.

  
\_\_\_\_\_  
William E. Longo, Ph.D.

P18 00060987

3597 Parkway Lane • Suite 250  
Norcross, Georgia 30092  
(404) 448-3200 FAX (404) 368-8256

BUILDING: Southdale Office Center  
Edina, MN

The following bulk samples from the above-referenced buildings were analyzed and were used to form an opinion of the manufacturer and product.

<u>Bulk Sample #</u>	<u>Sample Location</u>	<u>Collected By</u>
1	7th Floor, Suite 735	IEA
2	7th Floor, Suite 735	IEA
3	7th Floor, Suite 735	IEA
4	7th Floor, Suite 735	IEA
5	7th Floor, Suite 735	IEA
6	7th Floor, Suite 735	IEA
7	7th Floor, Suite 735	IEA
8	7th Floor, Suite 735	IEA
9	7th Floor, Suite 735	IEA
10	7th Floor, Suite 735	IEA
11	7th Floor, Suite 735	IEA
12	7th Floor, Suite 735	IEA
13	7th Floor, East Wing	IEA
14	7th Floor, East Wing	IEA
15	7th Floor, East Wing	IEA
16	7th Floor, East Wing	IEA
17	7th Floor, East Wing	IEA

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Southdale Office Center

18	7th Floor, East Wing	IEA
19	7th Floor, East Wing	IEA
20	7th Floor, East Wing	IEA
21	7th Floor, South Wing	IEA
22	7th Floor, South Wing	IEA
23	7th Floor, South Wing	IEA
24	7th Floor, South Wing	IEA
25	7th Floor, South Wing	IEA
26	7th Floor, South Wing	IEA
27	7th Floor, South Wing	IEA
28	7th Floor, South Wing	IEA
29	Basement Storage	IEA
30	Suite 165	IEA
31	Suite 555	IEA

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2971-1Date: 6/11/89Project Name: Law Assoc. / AILAnalyst: JohnSample Identification: P. 52 00609 - 375A71AReviewer: [Signature]Gross Visual Description: Beige, fibrous, fine grained matrix with gold  
flakes and flocks

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.551L 1.54L
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53Gypsum common - some carbonate presentEFFERVESCENCE: weak - moderate

## COMMENTS:

MSO



## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-2Date: 6/16/89Project Name: Law Assoc IATLAnalyst: JhmSample Identification: P15A 00609 - 3750 51 B

Reviewer:

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54 L 1.55 H
Sign of Elongation	+
Extinction	0
Birefringence	Low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53  
Gypsum Common - Some Carbonate presentEFFERVESCENCE: weak - moderateCOMMENTS: NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2972-3Date: 6/16/88Project Name: Law Assoc. / ATLAnalyst: John  
Reviewer: JohnSample Identification: PISA 00609 - 375471CGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.541 / 1.557
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders: 53  
Gypsum Common - Some Carbonate presentEFFERVESCENCE: weak - moderate

## COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M297I-4Date: 6/16/89Project Name: Law Assoc. / ATLAnalyst: JH  
Reviewer: JHSample Identification: PISA 00609 - 3754710Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	many
Pleochroism	no
Refractive Index	1.541/1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders	53
Gypsum common - some carbonate present	

EFFERVESCENCE: Weak - moderateCOMMENTS: NSD

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-5Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: gm  
Reviewer: \_\_\_\_\_Sample Identification: PISA 00609 375A 72 AGross Visual Description: Beige, fibrous, fine grained matrix  
with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy	_____	_____
Pleochroism	NO	_____	_____
Refractive Index	1.54 L 1.55 H	_____	_____
Sign of Elongation	+	_____	_____
Extinction	0	_____	_____
Birefringence	Low	_____	_____
Melt	NO	_____	_____
Fiber Name	Chrysotile	_____	_____

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12	_____
Amosite	_____	_____
Crocidolite	_____	_____
Tremolite/Actinolite	_____	_____
Anthophyllite	_____	_____

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	_____
Fibrous glass	_____
Cellulose	_____
Synthetic	_____
Talc	_____

## NON-FIBROUS COMPONENTS:

Perlite	_____
Vermiculite	35
Mica	_____
Quartz	_____
Calcite	_____
Gypsum	_____
Diatoms	_____
Other	_____

Binders: 53  
Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: weak - moderateCOMMENTS: NISD

PIS 00060994

MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-6Date: 6/17/89Project Name: Law Assoc. / AILAnalyst: JHSample Identification: P112A 0009 375A 72B

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, fine-grained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	<u>wooly</u>
Pleochroism	<u>ND</u>
Refractive Index	<u>1.54-1.55//</u>
Sign of Elongation	<u>+</u>
Extinction	<u>0</u>
Birefringence	<u>low</u>
Melt	<u>ND</u>
Fiber Name	<u>Chrysotile</u>

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	<u>12</u>
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	<u>35</u>
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53  
Gypsum Common - scattered grains of carbonate presentEFFERVESCENCE: weak - moderateCOMMENTS: MSO

PIS 00060995

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972 - 7Date: 6/17/89Project Name: Law Assoc / ATLAnalyst: Jhm  
Reviewer: \_\_\_\_\_Sample Identification: Pisa 00609 375A-726Gross Visual Description: Beige, fibrous, fine grained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	Many	.....
Pleochroism	.....	NO	.....
Refractive Index	.....	1.546 1.551	.....
Sign of Elongation	.....	+	.....
Extinction	.....	0	.....
Birefringence	.....	low	.....
Melt	.....	NO	.....
Fiber Name	.....	Chrysotile	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	12
Amosite	.....	
Crocidolite	.....	
Tremolite/Actinolite	.....	
Anthophyllite	.....	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....
Fibrous glass	.....
Cellulose	.....
Synthetic	.....
Talc	.....

## NON-FIBROUS COMPONENTS:

Perlite	.....
Vermiculite	.....
Mica	.....
Quartz	.....
Calcite	.....
Gypsum	.....
Diatoms	.....
Other	.....

Binders ..... 53Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: weak - moderateCOMMENTS: NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Sp# #: M 2972-8Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: John  
Reviewer: JohnSample Identification: Prisa 00609 375A-72DGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54 & 1.55 //
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53  
Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: weak to moderate

## COMMENTS:

N50

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: m 2972-9Date: 6/17/89Project Name: Law Assoc / ATLAnalyst: JohnSample Identification: Pusa 00609 375A 73A

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.55 // 1.54
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders	53
Gypsum common - scattered grains of Carbonate present.	

EFFERVESCENCE: weak - moderate

## COMMENTS:

Also



## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M297270Date: 6/17/89Project Name: Law Assoc./ATLAnalyst: Jha  
Reviewer: JhaSample Identification: Prisa 00609 375A 73BGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and bubbles

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.541-1.551</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	
Crocidolite	.....	
Tremolite/Actinolite	.....	
Anthophyllite	.....	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	
Fibrous glass	.....	
Cellulose	.....	
Synthetic	.....	
Talc	.....	

## NON-FIBROUS COMPONENTS:

Perlite	.....	
Vermiculite	.....	<u>35</u>
Mica	.....	
Quartz	.....	
Calcite	.....	
Gypsum	.....	
Diatoms	.....	
Other	.....	

Binders 53  
Gypsum (common) - scattered grains of Carbonate presentEFFERVESCENCE: weak - moderateCOMMENTS: NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 7.972-11Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: gjm  
Reviewer: gjmSample Identification: Pisa 00609 375A 736Gross Visual Description: Beige, fibrous, fine grained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54-1.55
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	33
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

## Binders

Gypsum Common	53
Scattered grains of Calcite Present	

EFFERVESCENCE: Weak - moderate

## COMMENTS:

NSD

MATERIALS ANALYSIS SHEET

## BULK ASBESTOS SHEET

Project # - Spl #: M2972-12Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: Jhm  
Reviewer: JhmSample Identification: Pisa 00609 375A 730Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.54-1.55/1
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders: Gypsum Common - 53  
Scattered grains of Carbonate PresentEFFERVESCENCE: Weak - moderate

## COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-13Date: 6/17/89Project Name: Law Assoc / ATLAnalyst: JMSample Identification: Prisa 60609 375A 67A

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54-1.55//
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders: 53  
Gypsum Common - Scattered grains of Carbonate PresentEFFERVESCENCE: Weak - moderateCOMMENTS: N/S

## MATERIALS ANALYTICAL SERVICES, INC.

## MILK ASBESTOS SHEET

Project # - Spl #: M 2972-14Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: JhmSample Identification: Prism 00009 375A 67B

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.546-1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders

53

Gypsum Common - scattered grains of carbonate PresentEFFERVESCENCE: Weak - no test

COMMENTS:

NSD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-15Date: 6/17/89Project Name: Law Assoc. / AICAnalyst: JMSample Identification: Pisn 00609 375A 67C

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold  
flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy	_____	_____
Pleochroism	NO	_____	_____
Refractive Index	1.55 // 1.54	_____	_____
Sign of Elongation	+	_____	_____
Extinction	0	_____	_____
Birefringence	low	_____	_____
Melt	NO	_____	_____
Fiber Name	chrysotile	_____	_____

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	17
Amosite	_____
Crocidolite	_____
Tremolite/Actinolite	_____
Anthophyllite	_____

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	_____
Fibrous glass	_____
Cellulose	_____
Synthetic	_____
Talc	_____

## NON-FIBROUS COMPONENTS:

Perlite	_____
Vermiculite	35
Mica	_____
Quartz	_____
Calcite	_____
Gypsum	_____
Diatoms	_____
Other	_____

Binders 53  
Gypsum common - scattered grains of Calcite present.EFFERVESCENCE: weak - moderateCOMMENTS: NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-16Date: 6/17/89Project Name: Law Assoc. 777LAnalyst: gjmSample Identification: Prism 00609 375 R 670Reviewer: gjmGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54-1.55
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53Gypsum Common - Scattered grains of Carbonate PresentEFFERVESCENCE: Weak - moderate

COMMENTS:

NSD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-17Date: 6/17/89Project Name: Law Assoc. ATLAnalyst: Jhn  
Reviewer: JhnSample Identification: Pisa 00609 375A 68AGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and bodies

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54 + 1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

## Binders

53

Gypsum Common - Scattered grains of Carbonate PresentEFFERVESCENCE: Weak - moderate

## COMMENTS:

NSO



## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-18Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: JohnSample Identification: Pisa 00609 375A 68BReviewer: JohnGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.542 / 1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53  
Gypsum Common - Scattered grains of carbonate presentEFFERVESCENCE: weak - moderate

COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-19Date: 6/17/89Project Name: Law Assoc? / ATLAnalyst: JHSample Identification: Pisa 00609 375A 68CReviewer: JHGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.551 / 1.551
Sign of Elongation	+
Extinction	0
Birefringence	100
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

## Binders

53

Gypsum Common - scattered grains of carbonate presentEFFERVESCENCE: Weak - moderate

## COMMENTS:

ASD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-20Date: 6/17/89Project Name: Law Assoc. / A.C.Analyst: Jhm  
Reviewer: \_\_\_\_\_Sample Identification: Pisa 00609 375A-680Gross Visual Description: Beige, fibrous, finegrained matel with gold  
flakes and pores

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.54-1.55/1
Sign of Elongation	L
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53Gypsum Common - Scattered grains of Calcite presentEFFERVESCENCE: Weak - Moderate

COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-21Date: 6/17/89Project Name: Law Assoc./ATLAnalyst: Jhm  
Reviewer: JhmSample Identification: Para 375A - 69AGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.541/1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

Binders 53Gypsum common - Scattered grains of Carbonate presentEFFERVESCENCE; Weak - moderate

## COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2972-22Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: ghm  
Reviewer: ghmSample Identification: Pisa 375A - 69BGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.546 1.551
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Talc	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Mica	
Quartz	
Calcite	
Gypsum	
Diatoms	
Other	

## Binders

Gypsum common - scattered grains of Carbonate present	53
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EFFERVESCENCE: Weak - moderate

## COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M7972-23Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: JhmSample Identification: Pesa 375A - 69 C

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	<u>Wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.54 L 1.55 H</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	.....
Crocidolite	.....	.....
Tremolite/Actinolite	.....	.....
Anthophyllite	.....	.....

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	.....
Fibrous glass	.....	.....
Cellulose	.....	.....
Synthetic	.....	.....
Talc	.....	.....

## NON-FIBROUS COMPONENTS:

Perlite	.....	.....
Vermiculite	.....	<u>35</u>
Mica	.....	.....
Quartz	.....	.....
Calcite	.....	.....
Gypsum	.....	.....
Diatoms	.....	.....
Other	.....	.....

Binders: 53  
Gypsum common - Scattered grains of carbonate present.EFFERVESCENCE: Weak - moderate

## COMMENTS:

NSO

PIS 00061013

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2972-25Date: 6/17/89Project Name: Law Assoc. / ATLAnalyst: Jhm  
Reviewer: JhmSample Identification: Pisa 375A - 70AGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.541/1.5511</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	
Crocidolite	.....	
Tremolite/Actinolite	.....	
Anthophyllite	.....	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	
Fibrous glass	.....	
Cellulose	.....	
Synthetic	.....	
Talc	.....	

## NON-FIBROUS COMPONENTS:

Perlite	.....	
Vermiculite	.....	<u>35</u>
Mica	.....	
Quartz	.....	
Calcite	.....	
Gypsum	.....	
Diatoms	.....	
Other	.....	

Binders 53  
Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: Weak - moderate

## COMMENTS:

NSD



## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2971-2.6Date: 6/17/89Project Name: Law Assoc / ATLAnalyst: Jhm  
Reviewer: JhmSample Identification: Prisa 375A-70BGross Visual Description: Beige, fibrous, finegrained matrix w. + h  
gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.54-1.55</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	.....
Crocidolite	.....	.....
Tremolite/Actinolite	.....	.....
Anthophyllite	.....	.....

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	.....
Fibrous glass	.....	.....
Cellulose	.....	.....
Synthetic	.....	.....
Talc	.....	.....

## NON-FIBROUS COMPONENTS:

Perlite	.....	.....
Vermiculite	.....	<u>35</u>
Mica	.....	.....
Quartz	.....	.....
Calcite	.....	.....
Gypsum	.....	.....
Diatoms	.....	.....
Other	.....	.....

Binders 53Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: weak - moderate

COMMENTS:

NSD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2972-27Date: 6/17/89Project Name: Law Assoc / ATLAnalyst: Jhm  
Reviewer: \_\_\_\_\_Sample Identification: Prisa 375A-20CGross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.55 // 1.54</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

## Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	_____
Crocidolite	.....	_____
Tremolite/Actinolite	.....	_____
Anthophyllite	.....	_____

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	_____
Fibrous glass	.....	_____
Cellulose	.....	_____
Synthetic	.....	_____
Talc	.....	_____

## NON-FIBROUS COMPONENTS:

Perlite	.....	_____
Vermiculite	.....	<u>35</u>
Mica	.....	_____
Quartz	.....	_____
Calcite	.....	_____
Gypsum	.....	_____
Diatoms	.....	_____
Other	.....	_____

Binders : 93  
Gypsum common - scattered grains of carbonate presentEFFERVESCENCE: weak - moderate

## COMMENTS:

ASD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2474-28Date: 6/17/89Project Name: Law Assoc. / HTLAnalyst: JHNSample Identification: Pusa 375A - 700

Reviewer: \_\_\_\_\_

Gross Visual Description: Beige, fibrous, finegrained matrix with gold flakes and books

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.541 1.5511</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	_____
Crocidolite	.....	_____
Tremolite/Actinolite	.....	_____
Anthophyllite	.....	_____

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	_____
Fibrous glass	.....	_____
Cellulose	.....	_____
Synthetic	.....	_____
Talc	.....	_____

## NON-FIBROUS COMPONENTS:

Perlite	.....	_____
Vermiculite	.....	<u>55</u>
Mica	.....	_____
Quartz	.....	_____
Calcite	.....	_____
Gypsum	.....	_____
Diatoms	.....	_____
Other	.....	_____

Binders ..... 53Gypsum common - scattered grains of Calcite PresentEFFERVESCENCE: weak-moderate

## COMMENTS:

NSD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M4334-5Date: 6/27/90Project Name: PRUDENTIAL : SOUTH DALE OFFICE COMPLEXAnalyst: W. B. EgleSample Identification: 5-051 FIREPROOFING; BSMT STORAGE, BLDG 6800120.61Gross Visual Description: LIGHT BEIGE, GOLD FLAKES AND BOORS AS WELL  
AS FIBERS BOUND BY AN ABUNDANT FINE MATRIX.

## Optical Data for Asbestos Identification

Morphology . . . . .	<u>WAVEY</u>	. . . . .	<u>          </u>
Pleochroism . . . . .	<u>NONE</u>	. . . . .	<u>          </u>
Refractive Index . . . . .	<u>(414) 1.54/1.55</u>	. . . . .	<u>          </u>
Sign of Elongation . . . . .	<u>+</u>	. . . . .	<u>          </u>
Extinction . . . . .	<u>parallel</u>	. . . . .	<u>          </u>
Birefringence . . . . .	<u>LOW</u>	. . . . .	<u>          </u>
Melt . . . . .	<u>N°</u>	. . . . .	<u>          </u>
Fiber Name . . . . .	<u>CHRYSOTILE</u>	. . . . .	<u>          </u>

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile . . . . . 10  
 Amosite . . . . .             
 Crocidolite . . . . .             
 Tremolite/Actinolite . . . . .             
 Anthophyllite . . . . .           

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool . . . . .             
 Fibrous glass . . . . .             
 Cellulose . . . . .             
 Synthetic . . . . .             
 Other . . . . .           

## NON-FIBROUS COMPONENTS:

Perlite . . . . .             
 Vermiculite . . . . . 37  
 Other . . . . .           

Binders . . . . . 53

ABUNDANT GYPSUM WITH FINE GRANULAR CARBONATE AND QUARTZ  
SEEN RANDOMLY THROUGHOUT.

EFFERVESCENCE: WEAK

## COMMENTS:

NO STARCH OBSERVED.

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: 17 4334-6Date: 6/27/90Project Name: PRUDENTIAL: SOUTH DALE OFFICE COMPLEXAnalyst: W.B. EganSample Identification: 6 - OS1 FIREPROOFING SUITE 165, BLDG 6800Gross Visual Description: LIGHT BEIGE, GOLD FLAKES AND BOOKS AS WELL AS FIBERS BOUND BY AND ABUNDANT FINE MATRIX.

## Optical Data for Asbestos Identification

Morphology . . . . .	WAVEY	. . . . .	. . . . .
Pleochroism . . . . .	NONE	. . . . .	. . . . .
Refractive Index . . . . .	(+1.1) 1.54/1.55	. . . . .	. . . . .
Sign of Elongation . . . . .	+	. . . . .	. . . . .
Extinction . . . . .	parallel	. . . . .	. . . . .
Birefringence . . . . .	LOW	. . . . .	. . . . .
Melt . . . . .	NO	. . . . .	. . . . .
Fiber Name . . . . .	CHRYSTOLE	. . . . .	. . . . .

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile . . . . .	10
Amosite . . . . .	
Crocidolite . . . . .	
Tremolite/Actinolite . . . . .	
Anthophyllite . . . . .	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool . . . . .	
Fibrous glass . . . . .	
Cellulose . . . . .	
Synthetic . . . . .	
Other . . . . .	

## NON-FIBROUS COMPONENTS:

Perlite . . . . .	
Vermiculite . . . . .	35
Other . . . . .	

Binders . . . . .	55
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ABUNDANT GYPSUM WITH FINE GRANULAR CARBONATE AND QUARTZ OBSERVED THROUGHOUT.

EFFERVESCENCE: WEAK

## COMMENTS:

NO STARCH OBSERVED

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M4334-7 Date: 6/27/90  
 Project Name: PRUDENTIAL: SOUTHDALE OFFICE COMPLEX Analyst: W.D. Egel  
 Sample Identification: 7.051 FIREPROOFING, SUITE 555, BLDG 6800

Gross Visual Description: LIGHT BEIGE. GOLD FLAKED AND LOOKS AS  
WELL AS FIBERS BOUND BY AN ABUNDANT FINE MATRIX.

## Optical Data for Asbestos Identification

Morphology	.....	<u>WAUDET</u>	.....	.....
Pleochroism	.....	<u>NONE</u>	.....	.....
Refractive Index	.....	<u>1.54/1.55</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>parallel</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>CHRYSOCTILE</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile ..... 10  
 Amosite .....  
 Crocidolite .....  
 Tremolite/Actinolite .....  
 Anthophyllite .....

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool .....  
 Fibrous glass .....  
 Cellulose .....  
 Synthetic .....  
 Other .....

## NON-FIBROUS COMPONENTS:

Perlite .....  
 Vermiculite ..... 37  
 Other .....

Binders ..... 53

ABUNDANT GYPSUM WITH CARBONATE AND SMALL AMOUNTS OF SILTY.  
QUARTZ SCATTERED THROUGHOUT.

EFFERVESCENCE: WEAK

## COMMENTS:

NO STARCH OBSERVED.

PIS 00061020

RECEIVED  
FBI  
LABORATORY

MATERIALS ANALYTICAL SERVICES, INC.  
3597 Parkway Lane  
Suite 250  
Norcross, GA 30092

TEM Analysis Type: Binder

Project Number/  
Sample Number: M-2971-1

Project Name: South Gate

Sample  
Identification: 00609 - 375A 717

Analyst/ Date: 6/25/89 Longo

Asbestos Minerals:

Chrysotile (dth/EOS)

Non-Asbestos Components:

Vermiculite (dth/EOS)

Gypsum (EOS)

Calcite (EOS) small Amount

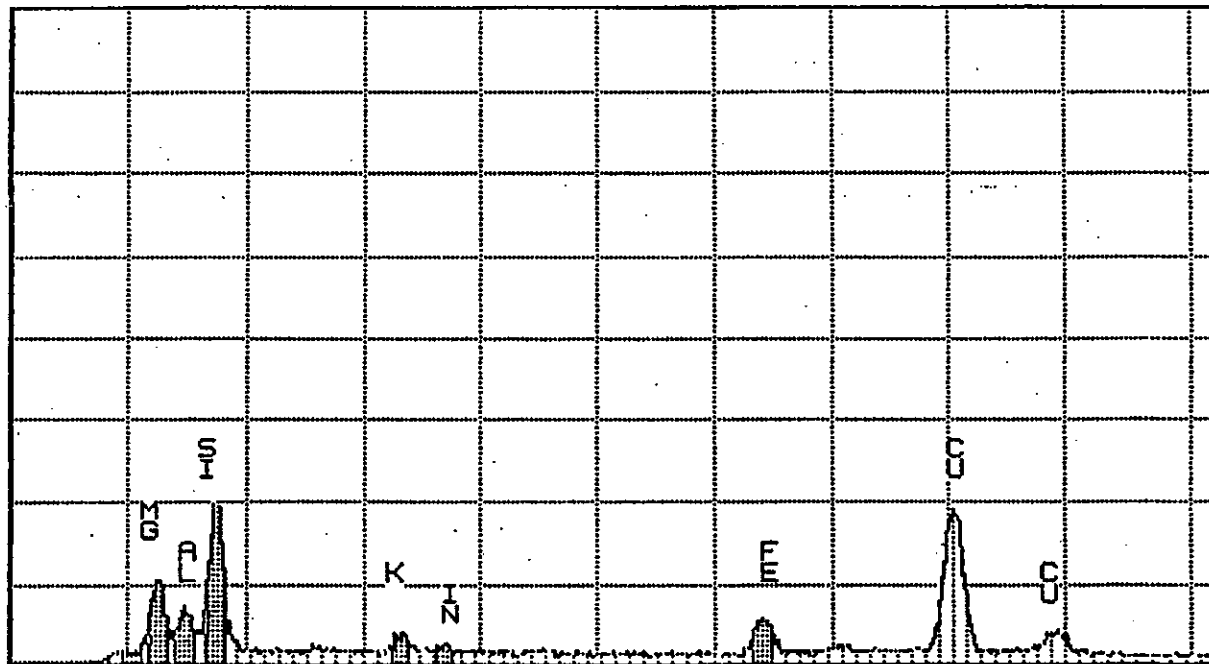
Comments: \_\_\_\_\_

MATERIALS ANALYTICAL SERVICES

SUN 25-JUN-89 12:36

Cursor: 0.000keV = 0

ROI (SIK $\alpha$ ) 1.660: 1.810=3019



0.000

VFS = 1024 10.240

30

M-2971-1: VERMICULITE

PIS 00061022

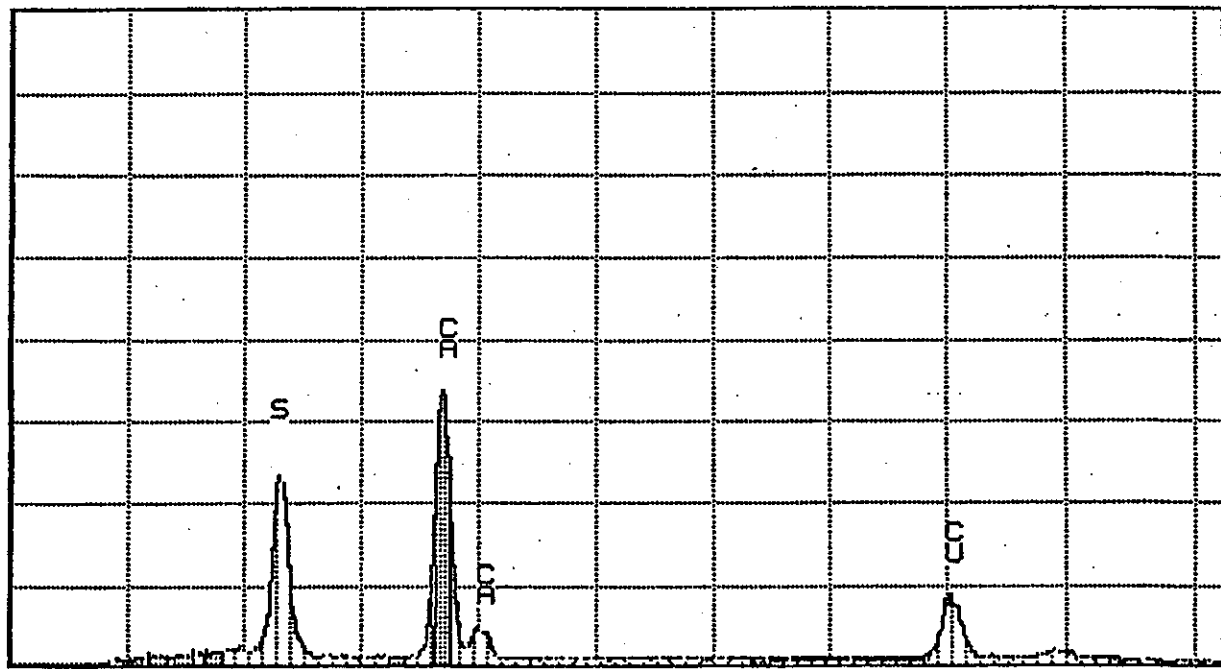


MATERIALS ANALYTICAL SERVICES

SUN 25-JUN-89 12:38

Cursor: 0.000keV = 0

ROI (SIKα) 1.660: 1.810=306



0.000

VFS = 1024

10.240

20

M-2971-1: GYPSUM

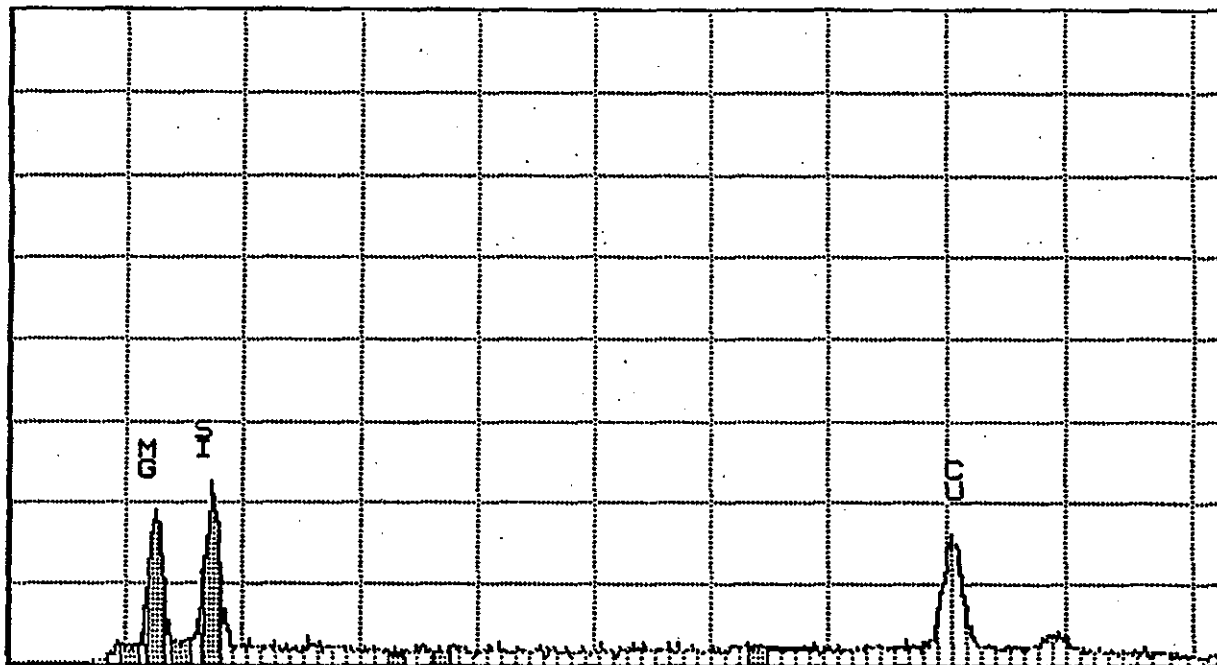
PIS 00061023

MATERIALS ANALYTICAL SERVICES

SUN 25-JUN-89 12:40

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ROI (SIK $\alpha$ ) 1.660: 1.810=1615



0.000

VFS = 512

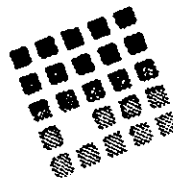
10.240

35

M-2971-1: CHRYSOTILE

PIS 00061024

M.A.S. 3597 PARKWAY LAKE MORGAN CROSS GA. 30092				ACID DISSOLUTION BULK ANALYSIS						A.E.	
ANALYSIS USING 2% SOLUTION HCL											
DATE 6/25/89											
No.	SAMPLE #	P-D + SAMPLE	P-D - SAMPLE	SAMPLE WEIGHT	FILTER WEIGHT	FINAL WT + FILTER	FINAL WT - FILTER	PERCENT FINAL WT	AMOUNT IN SOLU.		
1	112971-1	8.8778g	7.5723g	1.3055g	0.0173g 7.5363g	7.9911g	0.4354g	33.4%	66.62		
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											



MATERIALS  
ANALYTICAL  
SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # M2971-1

Analyst W.B. Eichel

Date 6/23/90

1) Sample Analyzed before after acid dissolutions

Starch observed

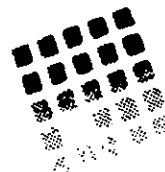
no ☒  
yes ☐

Iodine test  
(ceiling tile only)

positive ☐  
negative ☐

PIS 00061026

3597 Parkway Lane • Suite 250  
Norcross, Georgia 30092  
(404) 448-3200




MATERIALS  
ANALYTICAL  
SERVICES

March 25, 1991

RE: Southdale Office Complex  
Edina, Minnesota

The constituent analysis of additional fireproofing samples for the above-referenced project supplements my June 25, 1990 opinion and confirms that the samples analyzed are Mono-Kote 3, which was manufactured by W. R. Grace.

Worksheets reflecting the analysis are attached.

  
\_\_\_\_\_  
William E. Longo Ph.D.

3597 Parkway Lane • Suite 250  
Norcross, Georgia 30092  
(404) 448-3200 FAX (404) 368-8256

PIS 00111041

BUILDING: Southdale Office Complex  
Edina, Minnesota

The following bulk samples from the above-referenced building were analyzed and were used to supplement the opinion regarding the manufacturer and product.

<u>Bulk Samples</u>	<u>Sample Location</u>	<u>Collected By</u>
1	6th Floor, Suite 674	LAI
2	6th Floor, Suite 676	LAI
3	5th Floor, Suite 555 North Side	LAI
4	5th Floor, Suite 555 South Side	LAI
5	4th Floor, Suite 425	LAI
6	4th Floor, Suite 410	LAI
7	3rd Floor, SW Corner 1st Column	LAI
8	3rd Floor, SW Corner End Beam on South Side	LAI
9	2nd Floor, Suite 243 2nd Column from North	LAI
10	2nd Floor, Suite 243 West Wall Beam	LAI
11	1st Floor, Suite 165 2nd Column, 2nd Row from South End	LAI
12	1st Floor, Suite 165 South Side	LAI
13	Basement Storage by Room #22	LAI
14	Parking Garage by Stall #40	LAI

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2468-1Date: 7/17/90Project Name: PRU / Southdale officeAnalyst: J. McKimSample Identification: 6800 France Ave #16th FloorGross Visual Description: Beige with fine fibers gold flakes and  
looks bound in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.53/1.54
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	

Binders	53
---------	----

Abundant Gypsum, fine grained aggregateEFFERVESCENCE: none - weak in isolated areas

## COMMENTS:

NSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M7468-2  
 Project Name: PRU / Southdale office  
 Sample Identification: 6800 France Ave #2

Date: 7/17/90  
 Analyst: J. M. Miller  
6th Floor

Gross Visual Description: Beige with fine fibers, gold flakes and  
books bound in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	Wavy		
Pleochroism	no		
Refractive Index	1.5511 / 1.544		
Sign of Elongation	+		
Extinction	0		
Birefringence	100		
Melt	no		
Fiber Name	Chrysotile		

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile . . . . . 12  
 Amosite . . . . .  
 Crocidolite . . . . .  
 Tremolite/Actinolite . . . . .  
 Anthophyllite . . . . .

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool . . . . .  
 Fibrous glass . . . . .  
 Cellulose . . . . .  
 Synthetic . . . . .  
 Other . . . . .

## NON-FIBROUS COMPONENTS:

Perlite . . . . .  
 Vermiculite . . . . . 35  
 Other . . . . .

Binders . . . . . 53

Abundant Gypsum, fine grained aggregate

EFFERVESCENCE: none - weak in isolated areas

COMMENTS: NSD



## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2468-3Date: 7/17/90Project Name: PRU / Southdale OfficeAnalyst: J. McArthurSample Identification: 6800 France Ave # 3 5th FloorGross Visual Description: Beige with fine fibers, gold flakes and  
dots bound in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	NO
Refractive Index	1.551 / 1.541
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	NO
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	

Binders	53
---------	----

Abundant Gypsum, fine grained aggregateEFFERVESCENCE: none - weak in isolated areas

## COMMENTS:

MSO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2468-4Date: 7/17/90Project Name: PRU / Southdale officeAnalyst: J. MartinSample Identification: 6800 France Ave #4 5th FloorGross Visual Description: Beige with fine fibers, gold flakes and  
darks found in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	Wavy		
Pleochroism	no		
Refractive Index	1.53 (541)		
Sign of Elongation	+		
Extinction	0		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	

Binders	53
---------	----

Abundant Gypsum, fine grained aggregateEFFERVESCENCE: none - weak in isolated areas

## COMMENTS:

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2468-SDate: 7/17/90Project Name: PRU / Southdale officeAnalyst: J. McLeanSample Identification: 6800 France Ave #5 4th FloorGross Visual Description: Beige with fine fiber, gold flakes and spots  
found in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	.....	100%	.....	.....
Pleochroism	.....	no	.....	.....
Refractive Index	.....	1.55-1.56	.....	.....
Sign of Elongation	.....	+	.....	.....
Extinction	.....	0	.....	.....
Birefringence	.....	low	.....	.....
Melt	.....	no	.....	.....
Fiber Name	.....	Chrysotile	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	12
Amosite	.....	
Crocidolite	.....	
Tremolite/Actinolite	.....	
Anthophyllite	.....	

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	
Fibrous glass	.....	
Cellulose	.....	
Synthetic	.....	
Other	.....	

## NON-FIBROUS COMPONENTS:

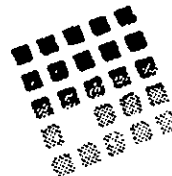
Perlite	.....	
Vermiculite	.....	35
Other	.....	

Binders	.....	53
---------	-------	----

Abundant Gypsum, fine grained aggregateEFFERVESCENCE: none - weak in isolated areas

## COMMENTS:

NISO



MATERIALS ANALYTICAL SERVICES, INC.  
3597 Parkway Lane, Suite 250  
Norcross, GA 30092  
404/448-3200

TEM ANALYSIS: BULK ANALYSIS

PROJECT: PRUDENTIAL: SOUTHDALE OFFICE COMPLEX 120.61  
SAMPLE NUMBER: M2468-5  
SAMPLE ID: #5 4TH FLOOR SUITE 425

DATE OF ANALYSIS: 8/20/90

ANALYST: N.B. Cych

---

Asbestos Minerals: CHRYSOTILE (EDS)(DIFF)

Other Components: VERTICULITE (EDS)  
GYPSUM (EDS)(DIFF)  
CALCITE (EDS) \* SMALL AMOUNT

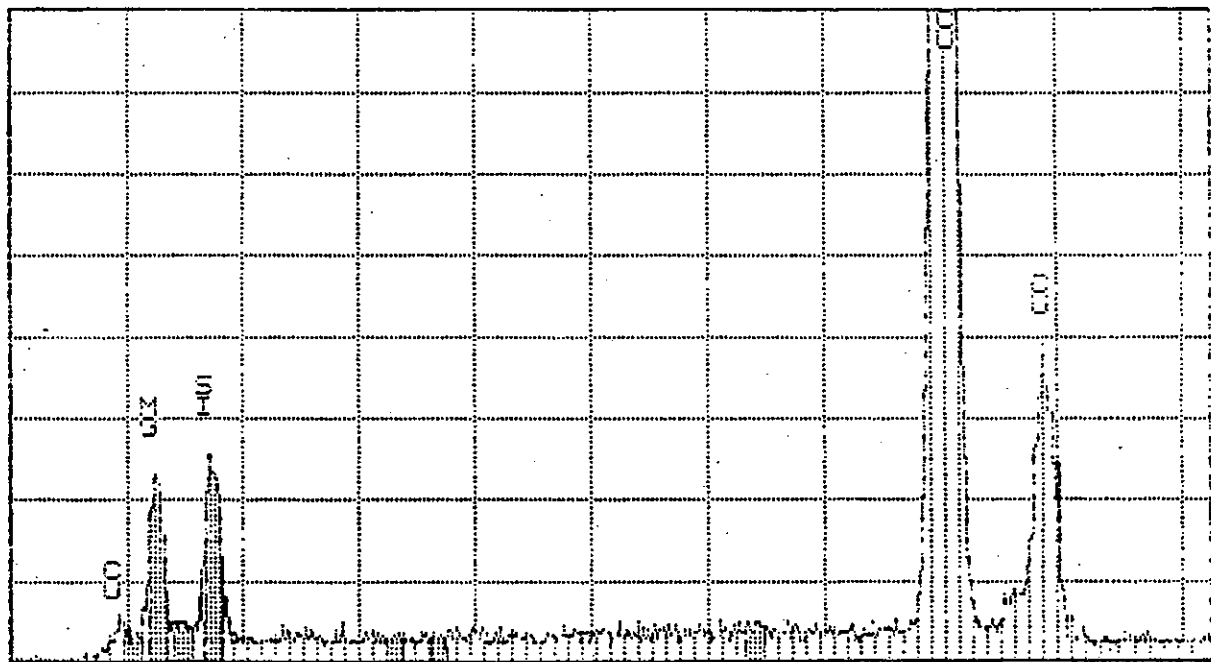
Comments:

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 15:20

Cursor: 0.000keV = 0

ROI (SIK $\alpha$ ) 1.560: 1.810=1012



0.000

VFS = 255

10.240

21

M2458-3, CHRYSOTILE

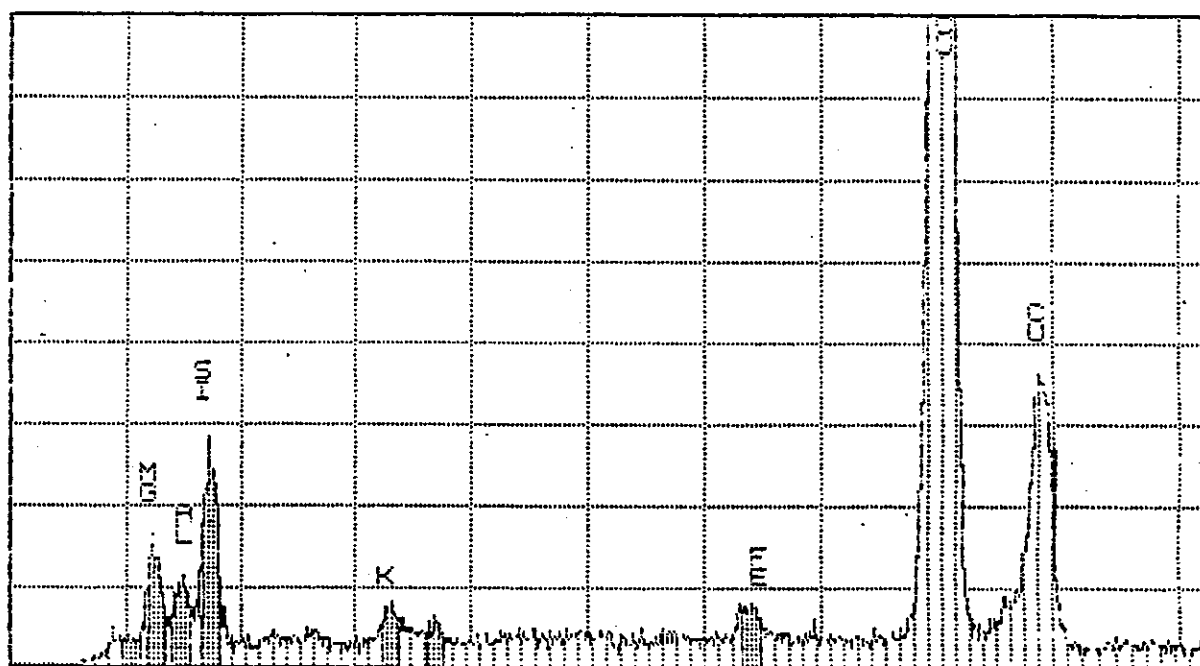
P18 00111049

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 15:22

Cursor: 0.000keV = 0

ROI (SIKα) 1.660: 1.810=1031



0.000

VFS = 256

10.240

21

M2468-5, VERMICULITE

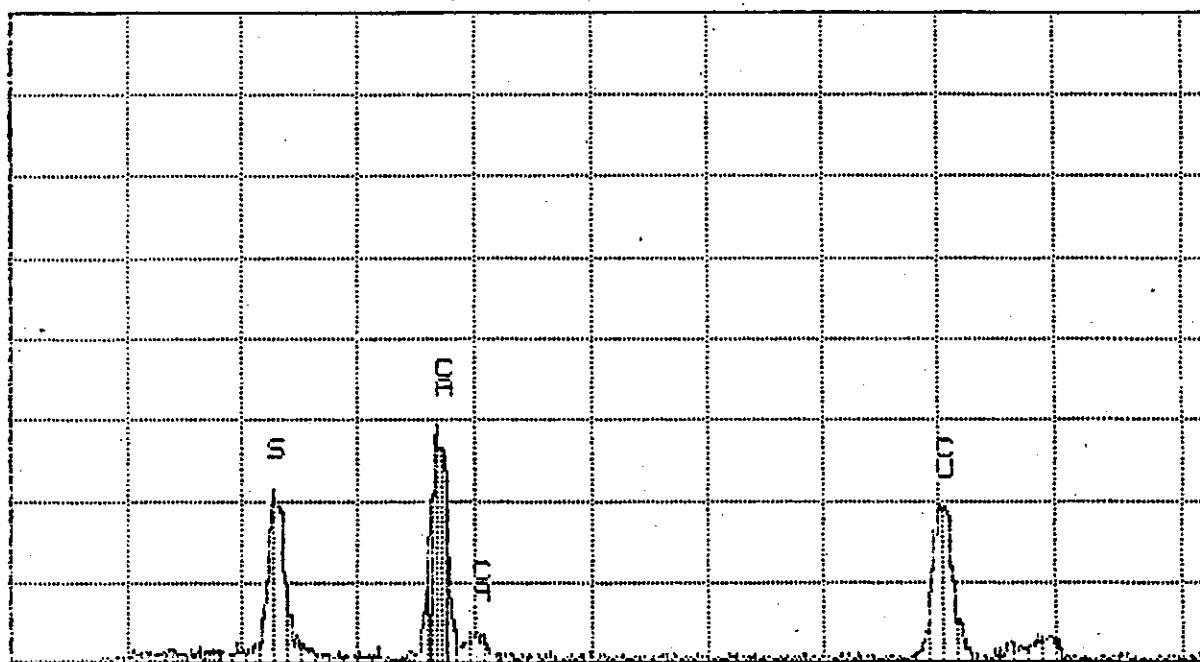
PIS 00111050

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 15:23

Cursor: 0.000keV = 0

ROI (SIK $\alpha$ ) 1.660: 1.810=62



0.000

VFS = 256

10.240

16

M2468-5, GYPSUM

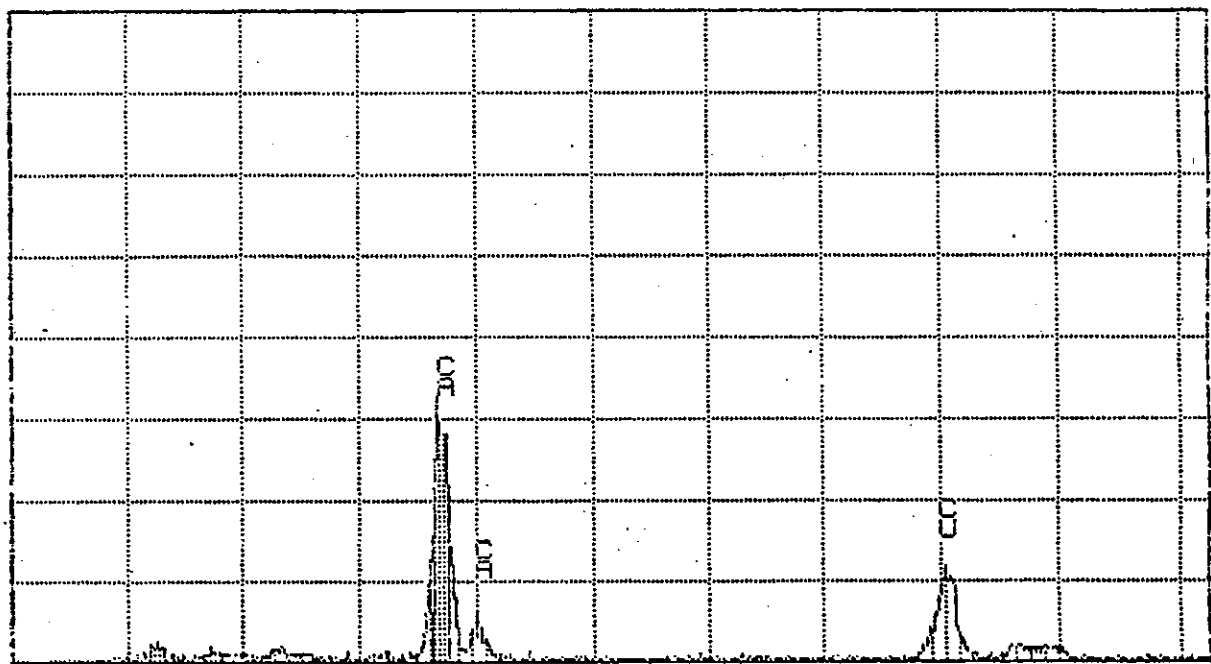
PIS 00111051

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 16:24

Cursor: 0.000keV = 0

ROI (SIKα) 1.660: 1.810=50



0.000

VFS = 255

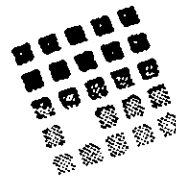
10.240

4

M2468-5, CALCITE

PIS 00111052





MATERIALS  
ANALYTICAL  
SERVICES

### ADDITIONAL BULK ANALYSIS

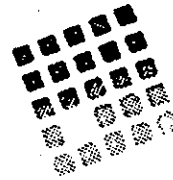
Sample # 112468-5

Analyst J. K. F.

Date 08/09/90

### ACID DISSOLUTION

(1) Petri dish plus sample:	<u>8.3848</u> g
(2) Petri dish minus sample:	<u>7.3342</u> g
(3) Original sample weight:	<u>1.0506</u> g
(4) Filter weight:	<u>0.0599</u> g
(5) Clean petri dish weight:	<u>7.3388</u> g
(6) Final sample weight plus filter and petri dish:	<u>7.8228</u> g
(7) Final sample wt: ((6) - [(4) + (5)])	<u>0.4241</u> g
(8) Percent residue wt: ((7)/(3) x 100)	<u>40.4</u> %
(9) Amount in solution: (100 - (8))	<u>59.6</u> %



MATERIALS  
ANALYTICAL  
SERVICES

ADDITIONAL BULK ANALYSIS

STARCH VERIFICATION

Sample # 172468-5

Analyst W. D. Egel

Date 8/17/90

1) Sample Analyzed before after acid dissolutions

Starch observed

(no) ☒

yes ☐

Iodine test  
(ceiling tile only)

positive ☐

negative ☐

PIS 00111054

3597 Parkway Lane • Suite 250  
Norcross, Georgia 30092  
(404) 448-3200



## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2468-7Date: 7/17/98Project Name: PRV / Southdale officeAnalyst: J. MartinSample Identification: 6800 France #7 3<sup>rd</sup> FloorGross Visual Description: Beige with fine fibers, gold flakes and bones  
Dosed in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	.....	<u>wavy</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.55/1.54</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>low</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	.....
Crocidolite	.....	.....
Tremolite/Actinolite	.....	.....
Anthophyllite	.....	.....

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	.....
Fibrous glass	.....	.....
Cellulose	.....	.....
Synthetic	.....	.....
Other	.....	.....

## NON-FIBROUS COMPONENTS:

Perlite	.....	.....
Vermiculite	.....	<u>35</u>
Other	.....	.....

Binders	.....	<u>53</u>
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Abundant Gypsum, fine grained aggregateEFFERVESCENCE: None - weak in isolated areas

## COMMENTS:

NSD

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M2468-8Date: 7/17/90Project Name: PRU / Southdale OfficeAnalyst: J. MohrSample Identification: 6800 France # 8 3<sup>rd</sup> FloorGross Visual Description: Beige with fine fibers, gold flakes and  
books bound in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	.....	<u>WJN</u>	.....	.....
Pleochroism	.....	<u>no</u>	.....	.....
Refractive Index	.....	<u>1.521-1.511</u>	.....	.....
Sign of Elongation	.....	<u>+</u>	.....	.....
Extinction	.....	<u>0</u>	.....	.....
Birefringence	.....	<u>(aw)</u>	.....	.....
Melt	.....	<u>no</u>	.....	.....
Fiber Name	.....	<u>Chrysotile</u>	.....	.....

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	.....	<u>12</u>
Amosite	.....	.....
Crocidolite	.....	.....
Tremolite/Actinolite	.....	.....
Anthophyllite	.....	.....

## OTHER FIBROUS COMPONENTS:

Mineral/Rock wool	.....	.....
Fibrous glass	.....	.....
Cellulose	.....	.....
Synthetic	.....	.....
Other	.....	.....

## NON-FIBROUS COMPONENTS:

Perlite	.....	.....
Vermiculite	.....	<u>35</u>
Other	.....	.....

Binders ..... 53Abundant Gypsum, fine grained aggregateEFFERVESCENCE: None - weak in isolated areas

COMMENTS:

NEO

## MATERIALS ANALYTICAL SERVICES, INC.

## BULK ASBESTOS SHEET

Project # - Spl #: M 2468-9Date: 7/7/90Project Name: PRU / Southdale OfficeAnalyst: J. MathewSample Identification: 6800 France E 9 2<sup>nd</sup> FloorGross Visual Description: Beige with fine fibers, gold flakes and bubbles  
in a fine grained matrix

## Optical Data for Asbestos Identification

Morphology	Wavy
Pleochroism	no
Refractive Index	1.5411656
Sign of Elongation	+
Extinction	0
Birefringence	low
Melt	no
Fiber Name	Chrysotile

## ASBESTOS MINERALS:

Est. Vol. %

Chrysotile	12
Amosite	
Crocidolite	
Tremolite/Actinolite	
Anthophyllite	

## OTHER FIBROUS COMPONENTS:

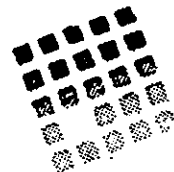
Mineral/Rock wool	
Fibrous glass	
Cellulose	
Synthetic	
Other	

## NON-FIBROUS COMPONENTS:

Perlite	
Vermiculite	35
Other	

Binders	53
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Abundant Gypsum, fine grained aggregateEFFERVESCENCE: None - Weak in Isolated AreasCOMMENTS: NSD



MATERIALS ANALYTICAL SERVICES, INC.  
3597 Parkway Lane, Suite 250  
Norcross, GA 30092  
404/448-3200

TEM ANALYSIS: *BULK ANALYSIS*

PROJECT: *PRUDENTIAL: SOUTHDALE OFFICE COMPLEX: 120.61*  
SAMPLE NUMBER: *M8Y68-9*  
SAMPLE ID: *"9 2ND FLOOR SUITE 243*

DATE OF ANALYSIS: *8/20/90*

ANALYST: *V.B. Ehl*

---

Asbestos Minerals: *CHRYSTILE (EDS) (DIFF)*

Other Components: *VERMICULITE (EDS)*  
*GYP SUM (EDS) (DIFF)*  
*CALCITE (EDS) \* TRACE OBSERVED (CHRYSTILE ADHERING)*

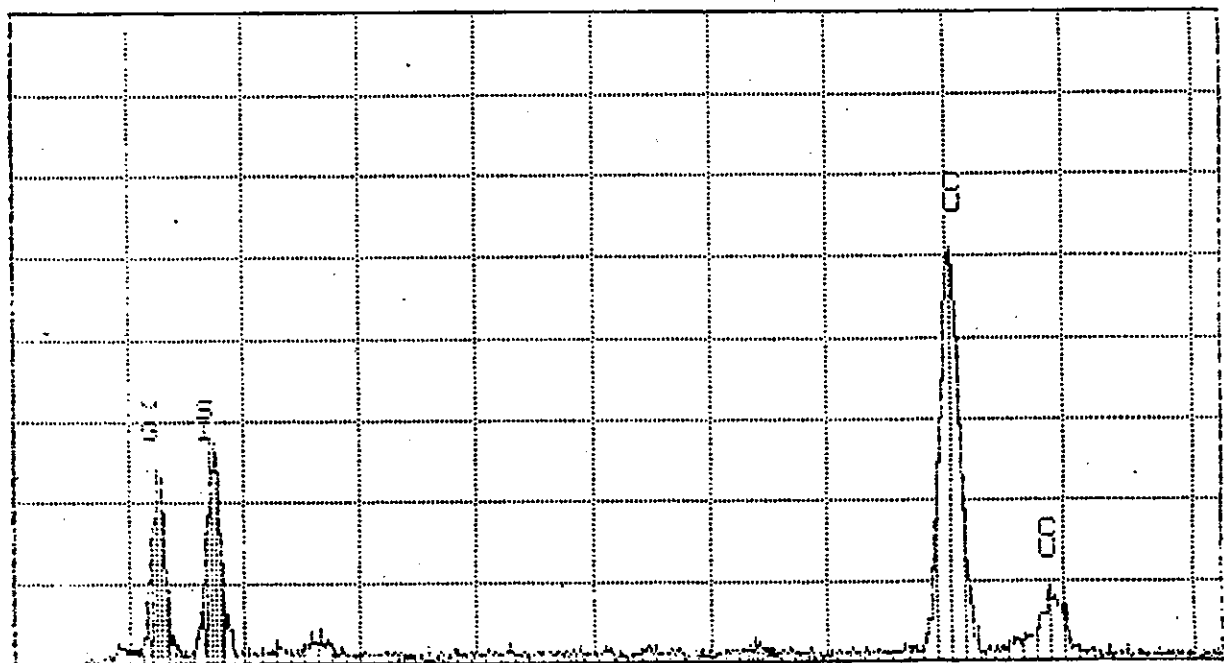
Comments:

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 15:36

Cursor: 0.000keV = 0

ROI (SiKα) 1.560: 1.810=1035



0.000

VFS = 256

10.240

5

M2468-9, CHRYSOTILE

PIS 00111060

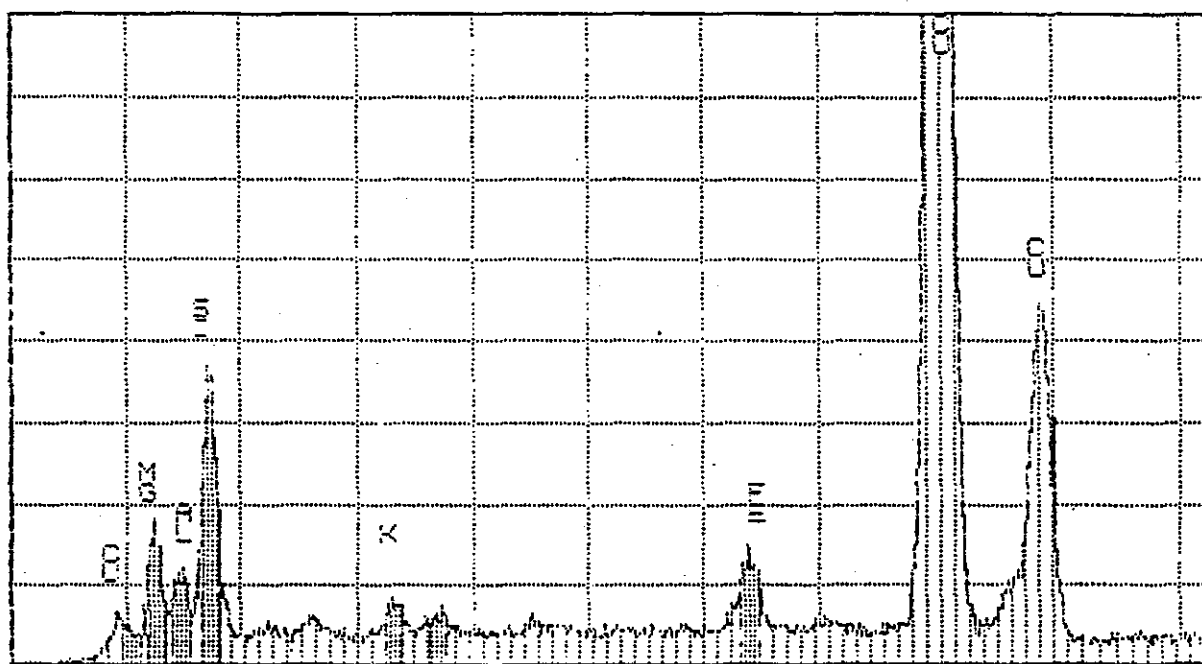


MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 16:39

Cursor: 2.000keV = 0

ROI (SIKα) 1.560: 1.810=2765



0.000

VFS = 512

10.240

70

M2468-9, VERMICULITE

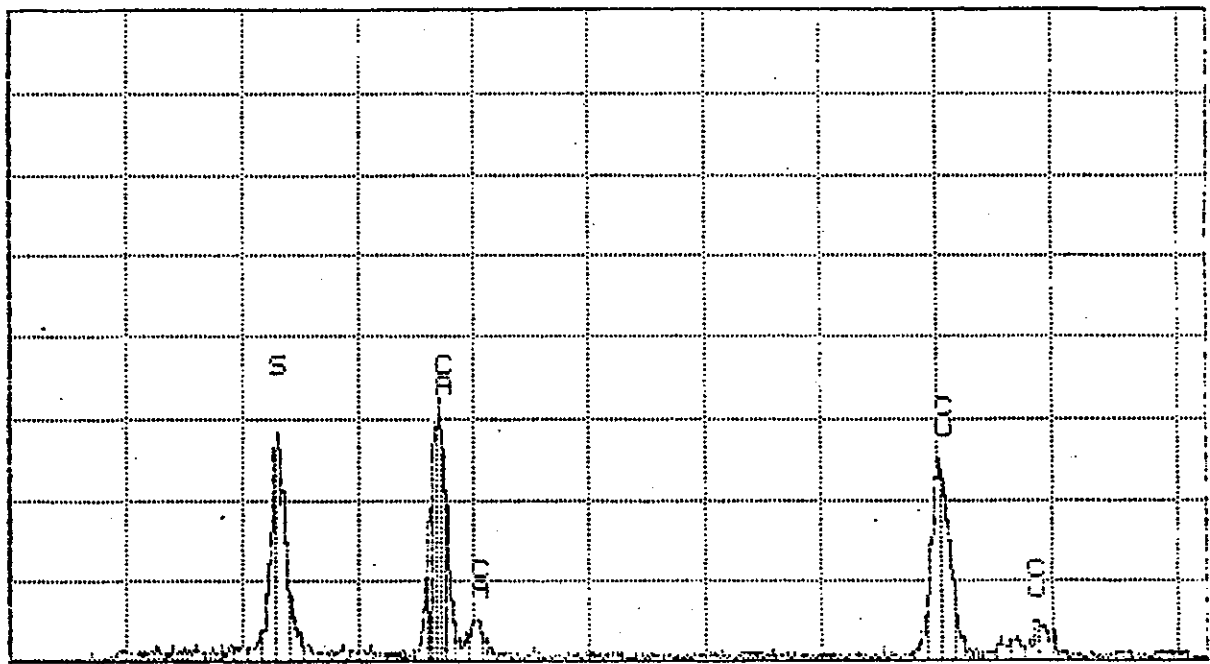
PIS 00111061

MATERIALS ANALYTICAL SERVICES

MON 20-AUG-90 16:40

Cursor: 0.000keV = 0

ROI (SIKα) 1.550: 1.810=47



0.000

VFS = 255

10.240

S

M2468-9, GYPSUM

PIS 00111062